AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS:

1. (original) An authentication method for establishing a connection between devices that can wirelessly communicate data, the method comprising the steps of:

(a) sending a first authentication-request message to another device to perform an authentication procedure with the other device to which a connection is wanted;

(b) sending a predetermined message according to a current operation mode to the other device and storing the predetermined message when an authentication-response message to the first authentication-request message is received;

(c) after performing the step (b), checking whether a received first message is a response message corresponding to the predetermined message when the first message from the other device is received;

(d) sending a response message corresponding to a second authentication-request message to the other device when the result of checking in the step (c) indicates that the first message is the second authentication-request message;

(e) after performing the step (d), checking whether a second message is a response message corresponding to the predetermined message when the second message from the other device is received; and

(f) finishing the authentication procedure when the result of checking in the step (e) indicates that the second message is a response message corresponding to the predetermined message.

2. (original): The authentication method of claim 1, wherein in the step (b), when the current operation mode is a pairing process, a message for generating a link key is sent as the predetermined message and stored, and when the current operation mode is not a pairing process, a message of connection-establishment-completion is sent as the predetermined message and stored; and the step (f) further comprises the sub-steps of:

(f1) generating a link key before finishing the authentication procedure when the current operation mode is a pairing process; and

(f2) finishing the authentication procedure and establishing a connection to the other device when the current operation mode is not a pairing process.

3. (original): The authentication method of claim 1, wherein the step (b) further comprises the sub-steps of:

(b1) checking whether the authentication-response message is valid using key information and random information; and

(b2) processing an authentication failure when the result of checking in the step (b1) indicates that the authentication-response message is not valid.

4. (original): The authentication method of claim 3, wherein in the step (b1), the key information is held by the present device and the random information was used in sending the first authentication message.

5. (original): The authentication method of claim 1, further comprising the step of:

(g) finishing the authentication procedure when the result of checking in the step (c) indicates that the received first message is a response message corresponding to the predetermined message.

6. (original): The authentication method of claim 4, wherein in the step (b), when the current operation mode is a pairing process, a message for generating a link key is sent as the predetermined message and stored, and when the current operation mode is not a pairing process, a message of connection-establishment-completion is sent as the predetermined message and stored; and

the step (g) further comprises the sub-steps of:

(g1) generating a link key before finishing the authentication procedure when the current operation mode is a pairing process; and

(g2) finishing the authentication procedure and establishing a connection to the other device when the current operation mode is not a pairing process.

7. (currently amended): An authentication method for establishing a connection between devices that can wirelessly communicate data, the method comprising the steps of:

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(a) sending a response message corresponding to a first authentication-request message when the first authentication-request message from another device that wants to establish a connection is received;

(b) after performing the step (a), checking an authentication condition of the present device when a predetermined message from the other device is received;

(c) <u>after performing the step (b),</u> storing the predetermined message and sending a second authentication-request message to the other device when the result of checking indicates that a mutual authentication is required; and

(d) after performing the step (c), sending a response message corresponding to the message stored in the step (c) to the other device when a response message from the other device corresponding to the second authentication-request message is received, and finishing the authentication procedure.

8. (original): The authentication method of claim 6, wherein in the step (d),

when the predetermined message received in the step (b) is a message for generating a link key, the present device sends a response message corresponding to the message for generating a link key to the other device, generates a link key, and then finishes the authentication procedure; and

when the predetermined message received in the step (b) is a message of connection-establishment-completion, the present device sends a response message corresponding to the message of connection-establishment-completion to the other device, finishes the authentication procedure, and then establishes a connection to the other device.

9. (original): The authentication method of claim 6, wherein the step (d) further comprises the sub-steps of:

(d1) checking whether the response message corresponding to the second authentication-request message is valid when the response message corresponding to the second authentication-request message is received by using random information and key information; and

(d2) processing an authentication failure when the result of checking in the step (d1) indicates that the response message is not valid.

10. (original): The authentication method of claim 9, wherein in the step (d1), the present device holds the key information and the random information was used in sending the first authentication message.

11. (original): The authentication method of claim 6, wherein in the step (b) authentication enable information is checked as the authentication condition.

12. (original): An authentication method for establishing a connection between devices that can wirelessly communicate data, the method comprising:

determining whether an authentication procedure for establishing a connection between devices that want to communicate data is performed as a unilateral authentication procedure or as a mutual authentication procedure, according to an authentication condition which enables receiving an authentication request in the two devices that can communicate data; and

performing the authentication procedure.

13.   (original): The authentication method of claim 10, wherein in performing the authentication procedure, when the authentication condition of the device that receives the authentication request is set to require the mutual authentication procedure, the mutual authentication procedure is performed by sending an authentication request message to the device that requests an authentication.

14.   (original):   The authentication method of claim 10, wherein in performing the authentication procedure, the authentication procedure is determined by checking authentication enable information of the device that receives the authentication request.